

Entrepreneurs and strategic decisions

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Making decisions is a fundamental cognitive process. People do it on a daily basis, sometimes even unconsciously. Decision making refers to the process of selecting one alternative from several available. The fact that there is selection in decision-making implies that there are alternative choices to be considered. These alternatives are analyzed and the best one or the most satisfying one is selected. Based on the amount of information available about these alternatives (and their predicted outcomes), decision scholars argue that most of our decisions fall into three main categories: (1) in conditions of certainty, when the decision maker has complete information on the outcomes of each alternative, (2) in risky conditions, when the decision-maker can estimate to a certain degree the outcome of selecting a particular alternative and (3) in conditions of uncertainty, when the decision maker has little to no information on the alternatives. Some of our daily routine decisions are made in conditions of absolute certainty, most of the decisions involving our private (e.g., choosing a spouse) or professional life (e.g., a hiring decision) fall into the second category, while some infrequent decisions are made when little to no information is available about the alternatives or their outcomes (e.g., starting a new venture). Strategic decisions (SD) certainly belong to the last category, in that they are highly complex, involve high degrees of uncertainty and have major consequences for the functioning of the organization.

Strategic decision-making (SDM) has been studied in a wide variety of settings, and has attracted widespread research attention from a broad array of scholars in different fields. A particular category of strategic decision-makers are entrepreneurs. Entrepreneurs have been deemed risk-takers and rugged individualists (McGrath, MacMillan, & Scheinberg, 1992) and are often portrayed as a breed apart (Ginsberg & Bucholtz, 1989). Douglas and Shepherd (1999: 232) mention that entrepreneurs have been characterized as 'people who respond to opportunities for creating new products and services that arise due to technical progress'. We will stick to one

of the most widely used definitions of an entrepreneur (Stewart & Roth, 2001), namely '*an individual who establishes and manages a [small] business for the purposes of profit and growth*' (Carland et al., 1984 in: Jenkins & Johnson, 1997: 895).

An especially salient subject in entrepreneurship research is how entrepreneurs differ from managers or non-entrepreneurs (Busenitz & Barney, 1997; Tan, 2001; Stewart & Roth, 2001; 2004). The factors described in the literature are highly relevant since they reflect distinctive elements in the SDM style of the entrepreneurs. In contrast to managers, entrepreneurs have been described as being risk seekers, less likely to adhere to established norms of behaviors, and less predictable in their decision making (Busenitz & Barney, 1997: 10). Moreover, there has been a growing interest in the cognitive component underlying entrepreneurial actions (e.g. Calori, Johnson & Sarnin, 1994; Busenitz & Barney, 1997; Busenitz, 1999; Tan, 2001; Stewart & Roth, 2001; 2004; Forbes, 2005). In fact, many of the aforementioned studies hypothesize that the differences between entrepreneurs and managers can be traced back to differences in the way they process information. In this article, we develop a generic model for entrepreneurial strategic decision-making (ESDM) based on the way entrepreneurs process information.

Entrepreneurial motivation

Motivational factors play an important role both in the decision to start a new venture as well as in other strategic choices once the new business is operating. In general motivation refers to the factors through which goal directed behavior is initiated, energized and maintained (Huczynski & Buchanan, 2007). For ESDM two motivational traits received considerable attention in the literature: self efficacy and tolerance for ambiguity.

The construct of *entrepreneurial self-efficacy* (ESE) is one of the more significant new concepts that have in recent years emerged from entrepre-

neurship research (Forbes, 2005). ESE was originally proposed as a key individual difference between entrepreneurs and non-entrepreneurs (Forbes, 2005). ESE is an extension of general *self-efficacy* defined as a set of individual beliefs concerning an individual's capability to mobilize and use cognitive and motivational resources in order to increase the sense of control over different life events (Bandura, 1977). In principle, entrepreneurs share a set of strong beliefs that they can control the effectiveness of a venture. These beliefs have major implications for the way in which entrepreneurial opportunities are identified and used, and thus are highly relevant for ESDM.

Tolerance for ambiguity is yet another motivational trait that was explored in relation to ESDM. A core argument in the entrepreneurial cognition literature is that because the decision situations faced by entrepreneurs are in general ambiguous (e.g., novel, complex and sometimes even intractable), the entrepreneurs' ability to tolerate these situations is a key factor for decision effectiveness. Tolerance for ambiguity is defined as the tendency to perceive ambiguous situations as desirable rather than threatening (Budner, 1962). In general entrepreneurs have a high tolerance for ambiguity, meaning that they feel comfortable in making decisions in situations in which they are aware that relevant information is missing. Very often, entrepreneurs have to react fast to emerging opportunities and therefore the tolerance for ambiguity is central for the effectiveness of ESDM.



Sensitivity to Cognitive Biases and Heuristics

Because of the limited possibilities of knowledge representation in the cognitive system and of limited computational resources, decision-makers do not analyze the available information rationally and extensively in order to make a decision (Shafir & LeBoeuf, 2002). Biases and heuristics help decision makers to derive simplified models when dealing with complex problems (Simon, 1957). Although it might seem that these simplifications of reality would hardly enhance decision making effectiveness, frequently these 'shortcuts' yield acceptable solutions for people in situations where they face uncertainty and complexity (Busenitz & Barney, 1997) - which we now know is the case in SDM. Moreover, these simplifications help the decision makers in overcoming the risk of becoming overwhelmed by the complexity and uncertainty of their environment (Calori et al., 1994).

An important premise in studies that incorporate the use of biases and heuristics in entrepreneurship research holds that individuals may not be subject to the use of biases and heuristics to the same extent (Busenitz & Barney, 1997; Busenitz, 1999; Curşeu, 2006). In this respect entrepreneurs are a group that seems very sensitive to some of the cognitive heuristics and biases. As mentioned before, the use of biases and heuristics can also be linked to the risk propensity dilemma. Scholars studying the use of biases and heuristics assert that indeed entrepreneurs seem to take more risk than do non-entrepreneurs, but then point out the ambiguous empirical evidence concerning risk propensity differences between managers and entrepreneurs. These scholars argue that the differences between entrepreneurs and non-entrepreneurs can rather be traced back to their different use of biases and heuristics than to their risk propensity. More specifically, these authors assume that entrepreneurs use biases and heuristics that lead to simplified problem domains to a greater extent than non-entrepreneurs and this explains the main difference is in the different way entrepreneurs and managers *perceive* risk (Busenitz, 1999). In the context of entrepreneurial decision-making, decisions often involve high levels of complexity, with a high degree of uncertainty and choices have

to be made quickly, thus the decision situations have a set of characteristics that foster the use of simplifying mechanisms (e.g., some heuristics and biases). In other words, proponents of the biases and heuristics view argue 'entrepreneurial activities simply become too overwhelming to those who are less willing to generalize through the use of biases and heuristics' (Busenitz & Barney, 1997: 14).

Emotions in ESDM

ESDM is a particular form of high stakes decisions and as mentioned by Kunreuther and colleagues (2002), because of the high stakes involved, strategic decisions are often associated with emotional reactions. A considerable amount of literature explores the general role of emotions in decision-making (Schwarz, 2000). In a timeline perspective, emotions may impact on the ESDM outcomes in three ways: emotions experienced in the moment of a decision (ad-hoc emotions), anticipated emotions for a particular choice (anticipated affect) and emotions associated with the evaluation of a past decision (post decision affect).

The main theoretical arguments concerning the impact of emotions on ESDM can be summarized as follows: (1) due to the high stakes involved and to the fact that they heavily rely on substantive information processing, ESDM are very susceptible to affect infusion, (2) in general, when deciding, entrepreneurs have a strong tendency of preserving a positive emotional mood and avoiding negative emotional states, therefore the influence of anticipated affect is very strong and (3) the experience of positive emotions will impact on information processing in the attention stage (the arguments and facts associated with a positive emotional valence will be selected and extensively processed), the encoding stage (positive outcomes or arguments will be more valued, often leading to an unrealistic optimism in decision making) and the retrieval stage (heuristic and intuitive information processing strategies will be reinforced as opposed to systematic and analytic strategies).

A generic cognitive model of ESDM

In this section we develop a unified cognitive model of ESDM. Strategic decisions are cog-

nitive tasks that demand substantive information processing, meaning that they cannot be addressed by simply activating pre-existing knowledge structures. Therefore available information needs to be carefully evaluated, new information needs to be gathered and eventually new task-specific knowledge representations need to be created. This process relies heavily on controlled information processing, which is based on analytical processing and explicit thought processes. In the specific case of entrepreneurs the impact of heuristic information processing, in strategic decisions is higher.

Entrepreneurs often have to make decisions with less information available to them than do managers. For instance, they often do not have access to historical trends, previous levels of performance, and little specific market information; material that often is available to managers (Busenitz & Barney, 1997). Moreover, private businesses ran by entrepreneurs are often too small to optimally confront the complex issues of large organizations, and they lack the level of sophistication of large enterprises (Tan, 2001). Yet, entrepreneurship's very nature demands quick decision-making and grasping of opportunities with incomplete information (Tan, 2001). In addition, managers in organizations rely on all kinds of decision making routines, and are only accountable for their 'piece of the pie', a luxury entrepreneurs cannot afford. The bottom line therefore, is that the predominant view in entrepreneurship literature is that entrepreneurs face higher levels of complexity and uncertainty than do managers. Intuition is often the way they tackle this high complexity and the outcomes of using intuition are two folded. If general heuristics and biases are used (usually associated with biased probabilistic judgments) the effectiveness of strategic decisions will be lower, while if highly context specific heuristics are used (usually developed through experience by dealing with similar unstructured decisional situations) the effectiveness of strategic decisions will be higher.

Several cognitive theories acknowledge that emotion and cognition are linked into a single interdependent representational system (Forgas, 1995) and the outcomes of information

processing depend on the interplay between cognition and emotions. Implicit knowledge representations are usually developed from emotionally relevant life experiences and thus often they are associated with a more specific or general emotional state. Another aspect of the influence of emotions on information processing refers to the retrieval of specific contents from the long term memory. In principle, positive emotional states strengthen judgments based on intuition, while negative emotions strengthen rational and analytical processes. For the specific case of ESDM the role of emotions is particularly important because > entrepreneurs are very keen on maintaining a general positive mood, and therefore the intuitive judgments will be strengthened as opposed to the rational and analytical ones. To conclude, next to the general tendency of using a heuristic type of information processing, entrepreneurs will be more inclined to rely on intuitive judgments when making strategic choices.

The core element of our model is the specific task representation activated in the working memory space. The task specific representation refers to the combined set of implicit knowledge representations and explicit knowledge representations activated from the long term memory under the influence of both emotional and motivational factors. The characteristics of this representation are always reflected in the strategic choice made by the entrepreneurs. In strategic situations, due to the high complexity and uncertainty involved, the specific task representations are supposed to result primarily from the controlled information processing. Nevertheless, in the specific case of ESDM, the content of the working memory representations are also influenced by the heuristic information processing as well as by the motivational factors (e.g., tolerance for ambiguity, self-efficacy, need for cognition). The specific task representations are therefore intermediary factors between the decision situation (information environment) and decisional outcomes. In line with previous managerial cognition arguments (Calori et al., 1994; Walsh, 1995) we argue here that a requirement of success in ESDM is that the complexity of the knowledge representation concerning a particular strategic issue should at least match the

complexity of the information environment in which the decision maker operates. Therefore, in order to be effective in their strategic choices, entrepreneurs have to develop complex representations about the strategic decision situation.

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